



Strategic Investments Overview

NASA

Technology Prioritization Workshop

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Director of Strategic Investments

April 21, 2004



Vision and Mission: Our New Starting Point

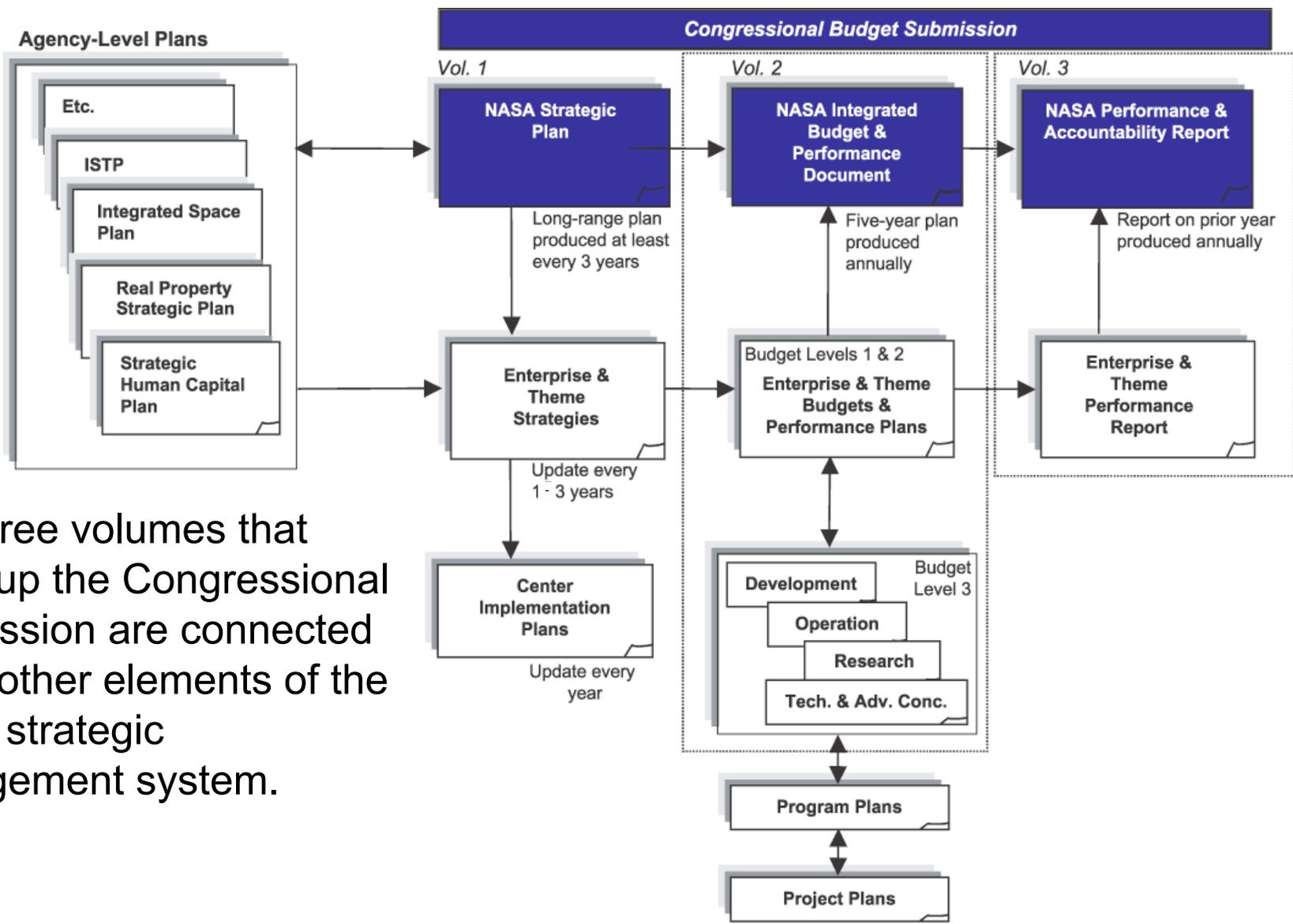
A composite image of space. The top left shows a glowing spiral galaxy. The bottom shows the blue and white horizon of Earth from space. A small NASA logo is in the top right corner of the image area.

The NASA Vision
To improve life here,
To extend life to there,
To find life beyond.

The NASA Mission
To understand and protect our home planet,
To explore the universe and search for life,
To inspire the next generation of explorers
... as only NASA can.



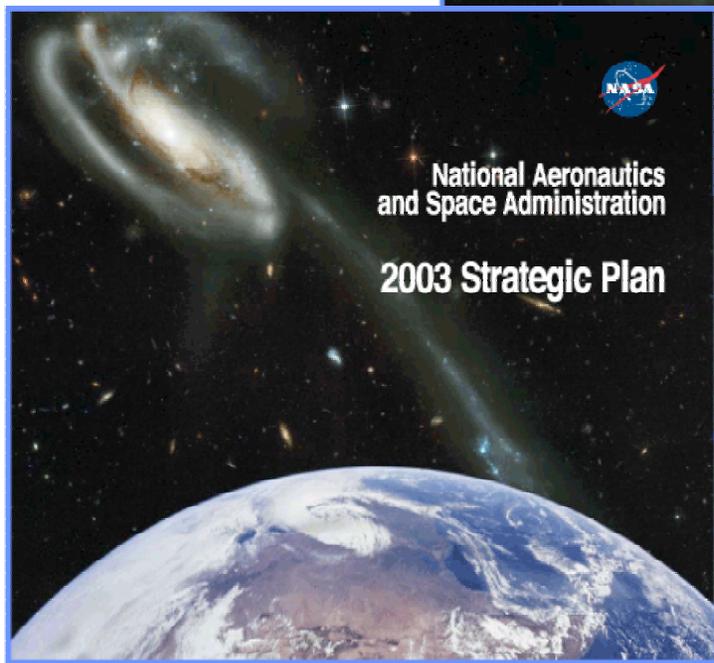
NASA Strategic Management Documents



The three volumes that make up the Congressional Submission are connected to the other elements of the NASA strategic management system.

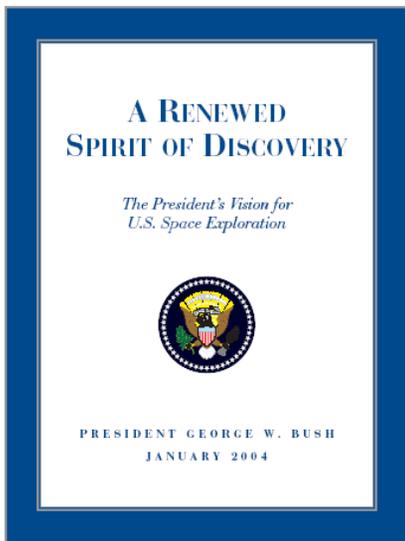


The Congressional Submission – FY 2004

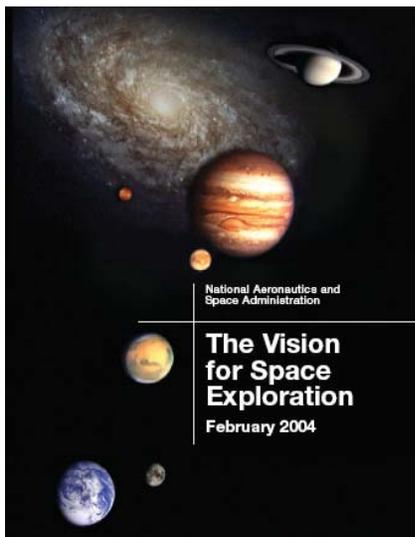




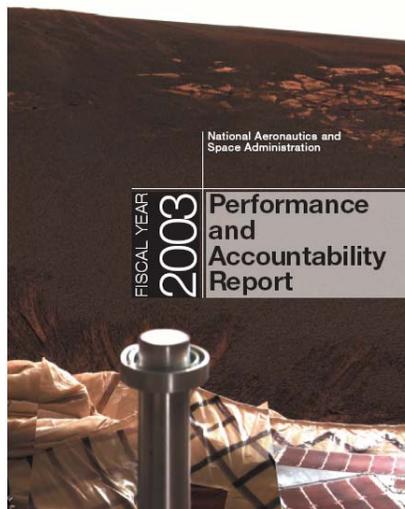
Key Documents – FY 2005 Budget Request



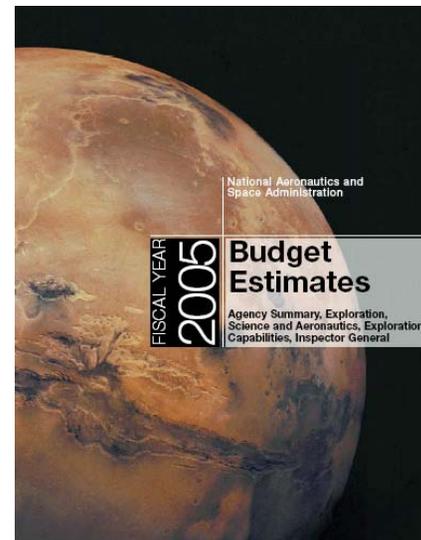
**President's
Policy Directive**



**The Vision for
Space Exploration**



**FY 2003 Performance
and Accountability
Report**



**Congressional
Budget Justification**



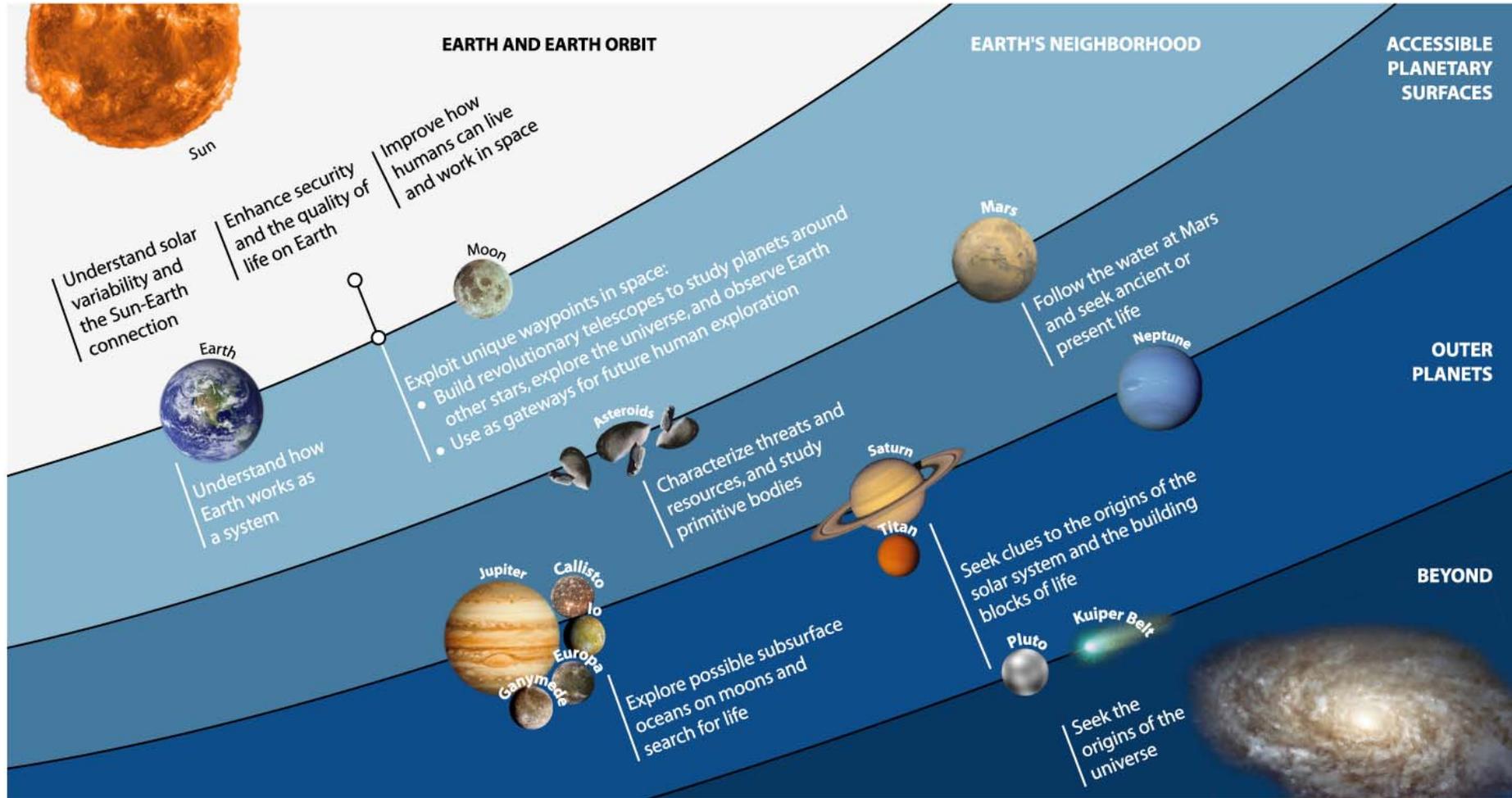
New Building Block Investments

Overcoming Barriers that Constrain Research and Discovery

Technological Barriers	Building Blocks	
	Ongoing Efforts	New Efforts
Power: Providing ample power for propulsion and science	Nuclear Systems Initiative <ul style="list-style-type: none">• Greatly increased power for space science and exploration	Project Prometheus <ul style="list-style-type: none">• Nuclear Power and propulsion for revolutionary science and orbital capabilities• First mission to Jupiter's moons
Transportation: Providing safe, reliable, and economical transportation to and from space, and throughout the solar system	Integrated Space Transportation Plan <ul style="list-style-type: none">• Orbital Space Plane• Extended Shuttle operations• Next-generation launch systems	Human Research Initiative <ul style="list-style-type: none">• Accelerate research to expand capabilities• Enable 100+ day missions beyond low-Earth orbit
Human Capabilities: Understanding and overcoming human limitations in space	In-Space Propulsion Program <ul style="list-style-type: none">• Efficient solar system transportation	Optical Communications <ul style="list-style-type: none">• Vastly improved communication transform science capability• First demonstration from Mars
Communications: Providing efficient data transfer across the solar system	Space Station Restructuring <ul style="list-style-type: none">• Research priority focused• Management reforms• Sound financial base	
	Bioastronautics Program <ul style="list-style-type: none">• Roadmap to address human limitations	



Robust Strategy for Scientific Discovery: Stepping Stones to Human and Robotic Exploration



Identify Key Targets

Robotic Trailblazers

Human Missions To Moon

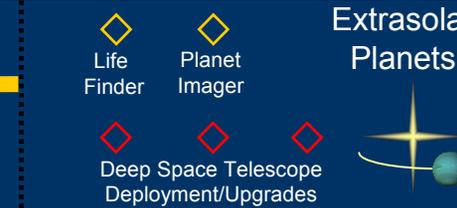
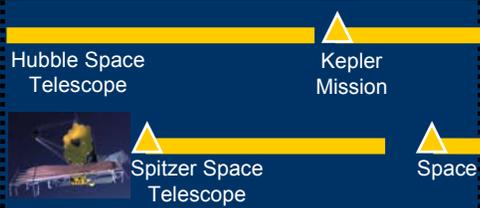
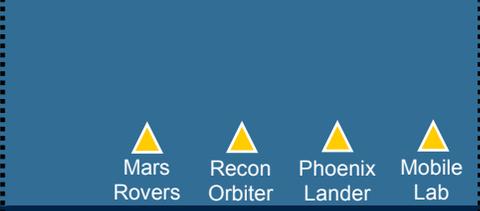
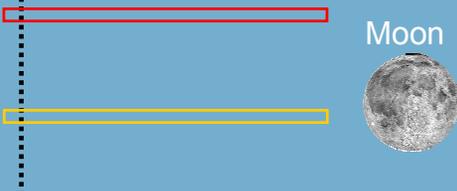
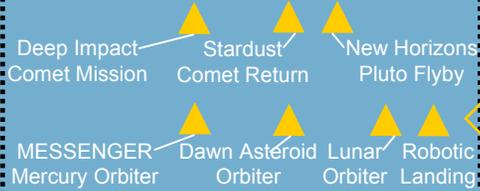
Go Beyond

Exploration Testbeds, Resources, and Solar System History

Past and Present Water and Life; Testbeds and Resources

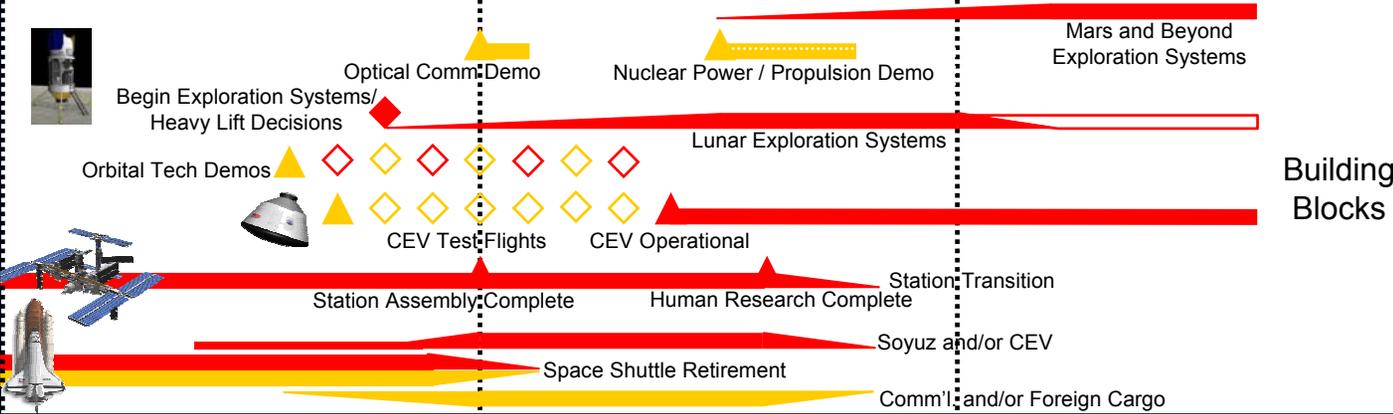
Underground Oceans, Biological Chemistry, and Life

Earth-Like Planets and Life



Key

- ▲ Planned Robotic Mission
 - ◇ Potential Robotic Mission/Decision*
 - ▬ Robotic Operations
 - ▲ Planned Human Mission
 - ◇ Potential Human Mission/Decision*
 - ▬ Human Operations
 - * Earliest estimated date
- NOTE: All missions indicate launch dates



2000

2010

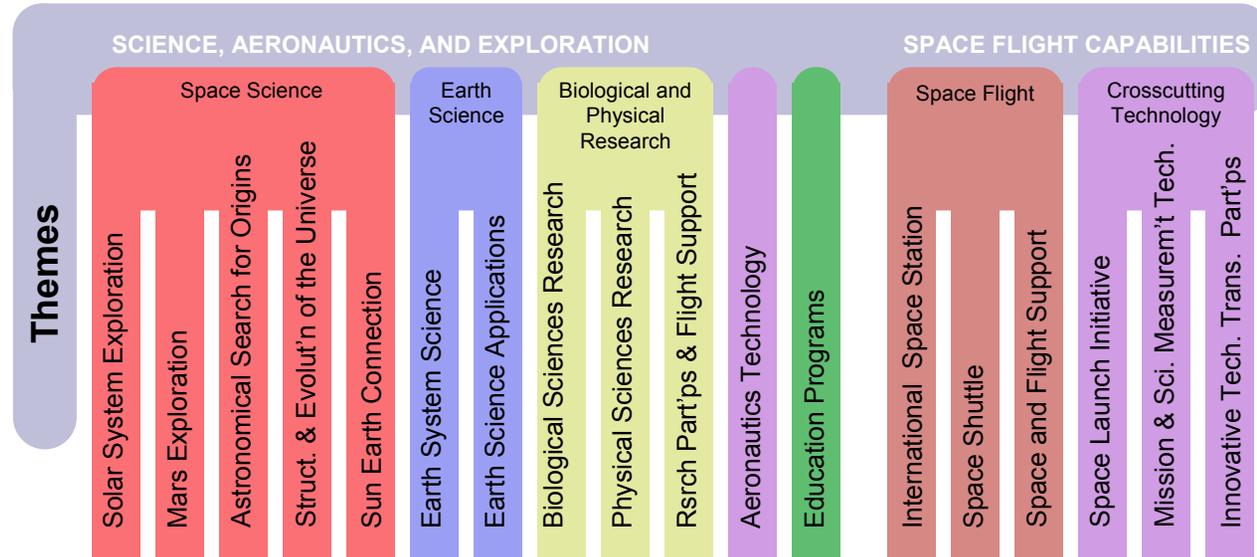
2020



The Strategic Organization

ONE NASA

Primary contribution to a Goal
 Supporting contribution to a Goal



Goals

MISSION	GOAL	Solar System Exploration	Mars Exploration	Astronomical Search for Origins	Struct. & Evolut'n of the Universe	Sun Earth Connection	Earth System Science	Earth Science Applications	Biological Sciences Research	Physical Sciences Research	Rsrch Part'ps & Flight Support	Aeronautics Technology	Education Programs	International Space Station	Space Shuttle	Space and Flight Support	Space Launch Initiative	Mission & Sci. Measurem't Tech.	Innovative Tech. Trans. Part'ps	
Understand & protect	1 Understand the Earth system ...	■				■	■	■						○	○	○				
	2 Enable a safer, more secure, ... air transportation system.											■								
	3 Create a more secure world ...										○	■	■	■	○	○	○	■	■	■
Explore	4 Explore the fundamental principles ... in ... space.								■	■				○	○					
	5 Explore the solar system ...	■	■	■	■	■									○	○				
Inspire	6 Inspire and motivate students ...	○	○	○	○	○	○	○	○	○	○	○	■	○	○	○	○	○	○	○
	7 Engage the public ...	○	○	○	○	○	○	○	○	○	○	■	○	○	○	○	○	○	○	○
ENABLING GOALS	8 Ensure the provision of space access ...													■	■	■	■			
	9 Extend ... human space flight ...		○						■	■				■	○	■	○	○		
	10 Enable revolutionary capabilities ...											■				■		■	■	■



Performance: Accountability

Strategic Plan

Vision

All performance must be tied to the NASA Vision

Mission

One NASA: Many Themes support each of 3 NASA Missions

Goal

7 Goals tied to the Mission + 3 enabling Goals

Objective

What is to be accomplished; owned by a single Theme.

Performance Plan

Outcome

An important multi-year step on a Theme's roadmap.

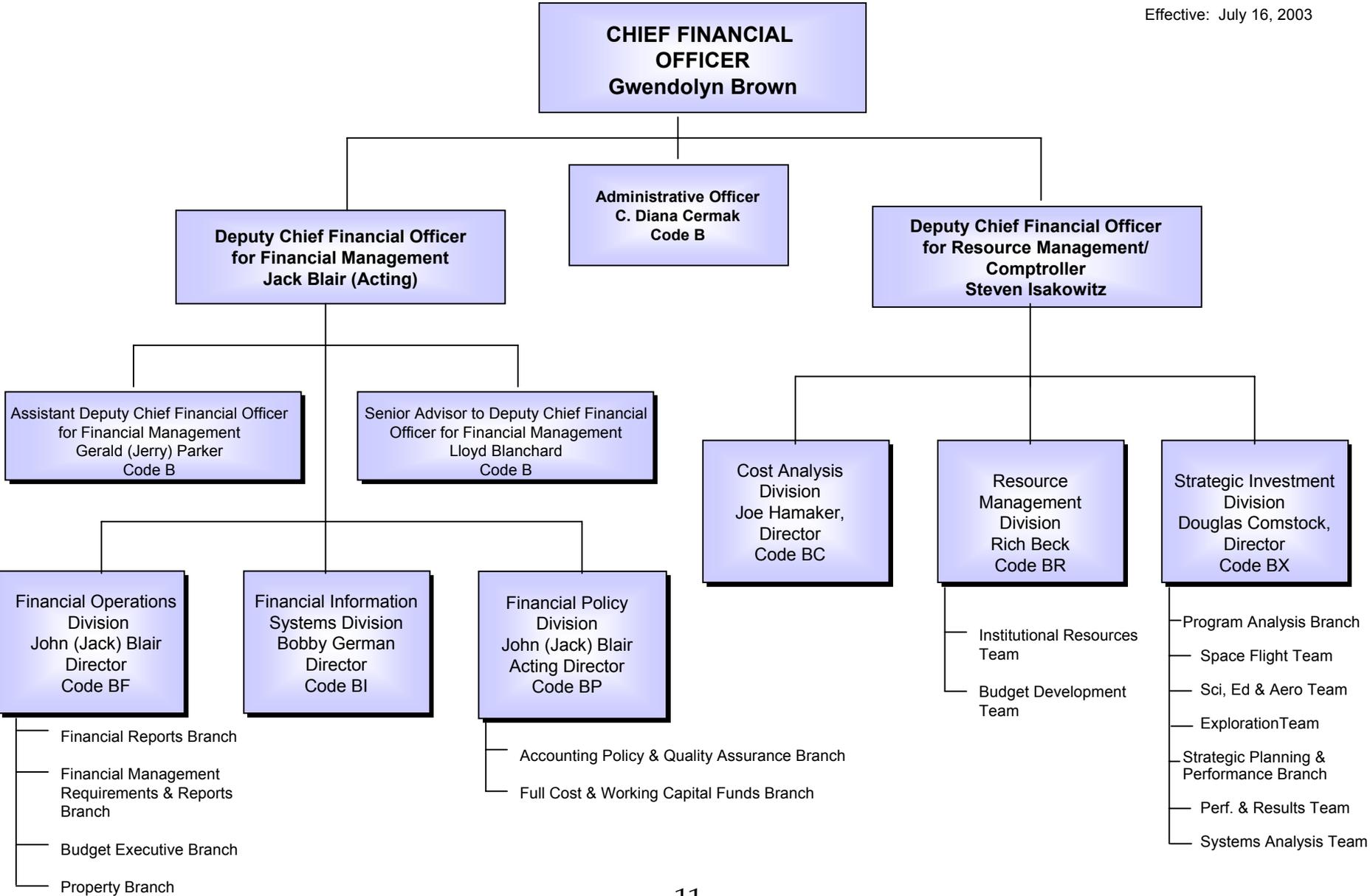
Annual Performance Goal

Indicates annual progress towards achieving outcomes.
Tied to a Theme's budget investment.



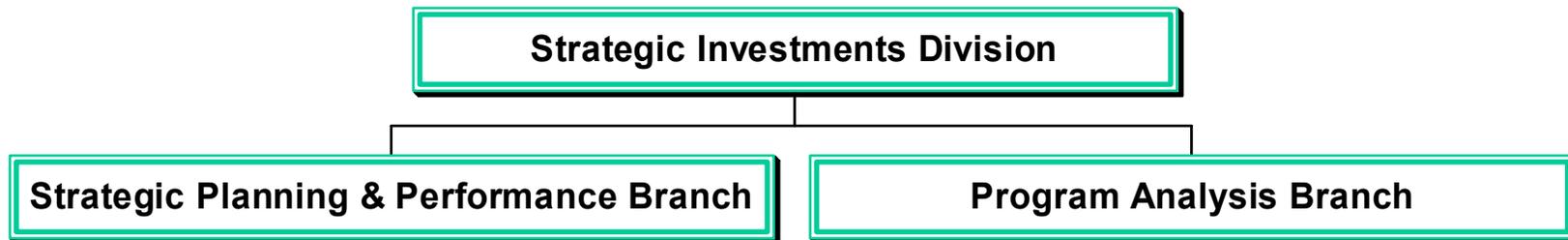
Office of the Chief Financial Officer (Code B)

Effective: July 16, 2003





Strategic Investments Division



Performance and Results Team

- Strategic Plan
- Integrated Planning
- Performance Measurement
- Performance Reporting
- Budget & Performance Integration
- Strategic Management

Systems Analysis Team

- Standards for Systems Analysis
- Analytical tool development
- Support to Space Architect
- Cross-Enterprise analysis

Space Flight Team

- Space Shuttle
- Space Station
- Space & Flight Support

Science, Education & Aero Team

- Space Science
- Earth Science
- Biological & Physical Research
- Education
- Aeronautics

Exploration Team

- Transportation
- Human and Robotic Technology



Code BX Products

Annual Budget Request – Integrated Budget and Performance Document (IBPD)

- **Code BX led the design, development and integration of the IBPD**
- **Totally revamped Congressional justification – well received**
- **Page count less than half with more information than before**
- **Integrates budget with performance, setting government-wide benchmark**

Performance and Accountability Report (PAR)

- **Code BX leads the formulation, integration, production of the PAR**
- **Met aggressive OMB schedule**
- **On schedule for meeting even more aggressive OMB schedule this year**

Strategic Plan

- **Code BX led the formulation, integration and production of the plan**
- **High quality plan, seven months ahead of schedule**

Integrated Planning

- **Code BX developed and implemented the plan for integrated Agency planning in support of the Associate Deputy Administrator for Technical Programs**
- **Integrated set of planning documents being produced for the first time, including Enterprise Strategies and Center Implementation Plans**
- **A planning ‘community’ has been established with significantly improved communications**
- **Working with other Agencies to share best practices**



Code BX Products

- **Budget Amendments and Supplemental Requests**
 - Code BX leads/supports strategy, drafting, integration and advocacy
 - FY 2003 Budget Amendment
 - Approved by OMB, adopted by appropriators
 - FY 2004 Supplemental Request
 - Approved by OMB and now appropriated
- **Performance Plans**
 - Pre-IBPD FY 2003 performance plan was re-mapped to new strategic framework for the Agency
 - FY 2004 performance plan revised to increase measurability of outcomes
- **Management Tool Development**
 - Code BX working with IFM Program and Chief Engineer to establish requirements and implementation plans for Erasmus



Systems Analysis

- **The systems analysis community across the Agency is often called upon to assess investment strategies.**
 - “How do we demonstrate alignment with the Agency Strategic Plan in a standard way?”
 - Wide range of analysis: ISTP, technology portfolios, cross Enterprise activities, spacecraft mission trades, etc....
- **There are no “best practices” or common analysis standards to enable “apples to apples” comparisons of results.**
 - Decision makers and analysts will both benefit from an open and transparent approach to performing and employing analysis products.
 - Have found that such standards are welcomed and encouraged.
- **Code BX is seeking to catalyze a systems analysis ‘community’ among existing organizations dispersed across the Agency.**
 - Budget process is a consumer of a great deal of Agency systems analysis products.
 - Currently engaged in dialog with systems analysis and systems engineering groups around the Agency on developing standards and a community.
 - Collecting inventory of tools, approaches, and environments from around the Centers.
 - Will conduct workshops and develop standards this year.
 - Goal is improved communications and strengthened capabilities, leading to better investment decisions.



Summary

Significant changes are underway

- **Integration among the vision and mission, strategic plan, budget, and performance planning and reporting**
 - Closer linkage of our budget estimates with our strategic plan, performance measures and institutional needs
 - Systems analysis efforts to improve linkage for better decisions
- **Integrated budget and performance information in a single document, linked to strategic plan objectives through new budget structure arranged in “themes”**
 - Ensures consistency among critical documents
- **Annual and long-term performance measures directly traceable through the strategic plan to the vision and mission**
 - Clear accountability for results through themes
- **Defined agency goals requiring multiple enterprises and themes, with interdependencies and shared accountabilities**
 - Reflects the One NASA philosophy

These changes will help NASA to achieve our Vision and Mission